PATENT APPLICATION

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No.: 10/033,584

REMARKS

Claims 1-13 and 16-19 are all the claims pending in the application. Applicant amends claims 12, 16, 18 and 19. No mew matter is introduced.

The Examiner rejected claims 1-13 and 16-19 under 35 U.S.C. 102(e) as being allegedly anticipated by Ofek (U.S. patent No. 6,654,752 B2). Applicant respectfully traverses this rejection in view of Applicant's amendment of the independent claims 12, 16, 18 and 19 and also in view of the following arguments.

<u>Claim 1</u>

First, Ofek does not teach or suggest a feature of the present invention specifically recited in claim 1, wherein the second logical volume and the third logical volume are split by a command from the first storage subsystem. On page 4, lines 15-17 of the Office Action, the Examiner alleges that this feature is taught in Fig. 13 and 16:64-67 and 17:12-13 of Ofek. Applicant respectfully submits that the Examiner is mistaken. Specifically, in Ofek, the SPLIT command is not sent by a <u>storage system</u>, as recited in the aforesaid claims, but by a <u>host</u>, which is an entirely different system element, see Ofek, Fig. 13 and 17:12-14. In more detail, at 17:12-14, Ofek teaches "the host 220 in FIG. 9 can issue a number of commands to establish the BCV device 226 as another mirror, to split the BCV device 226..." Applicant also wishes the draw the Examiner's attention to Fig. 13 of Ofek clearly showing the SPLIT command originating with a host. Therefore, Ofek does not teach or suggest that the SPLIT command is sent by the first storage system, as recited in the independent claims.

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That the host and the storage system are two distinct system elements is abundantly clear

from Fig. 1 cited by the Examiner and from the fact that claims 1 and specifically recite the host

as a separate element. The host is designated with numerals 13 and 40, while the storage devices

are shown separately and are designated with numerals 15, 16, 42 and 43. On page 3, line 7 of

the Office Action, the Examiner read the term "first storage system" on storage device 42, shown

in Fig. 1, which is an entirely different element from the hosts 13 and 40.

Applicant notes that the Examiner might have gotten confused by elements 221 and 220

of the host 222 in Fig. 13, which visually resemble storage devices. However, the specification

of Ofek clearly describes the aforesaid elements as software applications which may be assigned

to any host and use storage volumes A and B, see 16:53-63: "Although FIG. 9 depicts a single

host, it is obvious that, in appropriate situations, the Volume A and B applications 221 and 222

could be assigned to separate hosts." Therefore, the host 222 is not the claimed first storage

system.

Therefore, Ofek fails to teach of suggest sending the SPLIT command by the fist storage

system. For all the foregoing reasons, claim 1 is not anticipated by Ofek.

Claims 2-5.

With respect to Examiner's rejection of claims 2-5, Applicant respectfully submits that

these claims are patentable by definition, at least due to their dependence on the patentable

independent claim 1.

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Claims 6 and 9

With respect to claims 6 and 9, Applicant respectfully submits that Ofek does not teach or

suggest at least several elements of claims 6 and 9. First, there is no teaching of means for

receiving an indication of files to be restored. The Examiner alleges that the teaching of the

aforesaid means appears at 22:54-59 of Ofek. However, Applicant's examination of the portion

of Ofek cited by the Examiner, as well as the remainder of that reference, did not reveal any such

teaching. Quite to the contrary, Ofek specifically teaches at 22:51-52 that "The RESTORE

command restores all the data on the BCV device 226 to the mirror devices 224 and 225."

Therefore, in Ofek, not specific files, but the entire content of the storage device is being

restored. This is exactly the opposite to the aforesaid claimed feature of the present invention.

Moreover, because Ofek teaches restoring the entire volume, Applicant respectfully

submits that the claimed "means for receiving an indication of files to be restored" are useless in

the system described by Ofek and, contrary to the Examiner's allegations, such means are simply

not taught by Ofek. Therefore, claims 6 and 9 are not anticipated by Ofek.

Second, because Ofek teaches restoring "all the data on the BCV device 226 to the mirror

devices 224 and 225", and does not teach restoring separate files, Ofek also does not need to

include means for determining whether "the files to restore comprise contents of an entire

volume," as specifically recited in claims 6 and 9. In view of the aforesaid teaching of Ofek,

such means would be also useless. Applicant carefully examined 22:51-52 of Ofek, which as the

Examiner alleges, teaches the aforesaid means, but could not locate any such teaching.

Therefore, Applicant respectfully submits that the alleged teaching is simply not in Ofek's

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reference. Therefore, claims 6 and 9 are not anticipated by Ofek for this additional reason as well.

Third, Ofek fails to teach "means for splitting remote mirrors existing between production volumes and backup volumes." As would be appreciated by the Examiner, data in the production volume is being modified by a software application and those modifications are copies to the backup (or standby) volume. The during the normal system operation, the data in the backup volume is not modified by a software application, as described in detail in paragraph [0002] of the instant application. Only after a failover occurs, the standby host becomes new production host and the standby volume becomes new primary volume. At that point, the old production host becomes a standby host and the old primary volume becomes new standby volume. Therefore, data in the production volume and the backup volume is never modified at the same time.

In Ofek, the data in volumes 224, 225 and 226 are all modified at the same time by the applications 221 and 222, as clearly shown in Fig. 13. Therefore, in Ofek, hosts 224, 225 and 226 are all production hosts. Therefore, the Examiner cannot allege, as he does at page 9, ln. 14 of the Office Action that splitting disk volumes 224, 225 and 226 constitutes "splitting remote mirrors existing between production volumes and backup volumes." Therefore, Ofek does not anticipate claims 6 and 9 for this additional reason as well.

Finally, because all volumes in Ofek are production volumes, Ofek also fails to teach or suggest "means for resynchronizing local mirrors existing between the backup volumes and volumes holding data copied from the backup volumes" and "means for resynchronizing remote

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mirrors for the production volumes and the backup volumes." This provides an additional reason

why claims 6 and 9 are not anticipated by Ofek.

Claim 7 and 8.

With respect to Examiner's rejection of claims 7 and 8, Applicant respectfully submits

that these claims are patentable by definition, at least due to their dependence on the patentable

independent claim 6.

Claim 10.

As stated above, with respect to claim 9, Ofek teaches restoring "all the data on the BCV

device 226 to the mirror devices 224 and 225" and not individual files. Therefore, Ofek fails to

teach of suggest "reading, at the second host, a file to be restored from the third volume."

Therefore, claim 9 is not anticipated by Ofek at least for this reason alone.

Claim 11.

With respect to Examiner's rejection of claim 11, Applicant respectfully submits that this

claim is patentable by definition, at least due to its dependence on the patentable independent

claim 10.

Claim 12.

The amended claim 12 recites a feature of the invention, wherein the first logical volume

and the second logical volume are operable to break the sync state in response to a command

from the primary storage subsystem. As stated in detail above in connection to claim 1, in Ofek,

the split command is sent from a host and not from the primary storage subsystem. Therefore,

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the aforesaid feature of the invention recited in claim 12 is not taught or suggested by Ofek.

Therefore, the amended claim 12 is not anticipated by Ofek.

<u>Claim 13.</u>

With respect to claim 13, Applicant respectfully submits that all of the above

patentability argument made by Applicant regarding claim 9, equally apply to claim 13.

Therefore, claim 13 is not anticipated by Ofek.

<u>Claim 16.</u>

The amended claim 16 recites a "means for splitting a sync state existing between a

second storage means and a third storage means in response to a command received from a first

storage means." As stated in detail above in connection to claim 1, in Ofek, the split command is

sent from a <u>host</u> and not from the first storage means. Therefore, the aforesaid feature of the

invention recited in the amended claim 16 is not taught or suggested by Ofek. Therefore,

amended claim 16 is not anticipated by Ofek.

<u>Claim 17.</u>

With respect to the Examiner's rejection of claim 17, Applicant respectfully submits that

Examiner's rejection of this claim is rendered moot by the present amendment of the parent

claim 16 and that this claim is patentable at least due to its dependence on the patentable

amended independent claim 16.

<u>Claim 18 and 19</u>

The amended claim 18 and 19 both recite a feature of the invention, wherein the second

and third logical volumes are being operable to break the sync state in response to a command
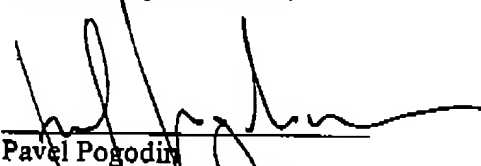
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from the first storage subsystem. As stated in detail above in connection to claim 1, in Ofek, the

split command is sent from a <u>host</u> and not from the first storage subsystem. Therefore, the

aforesaid feature of the invention recited in amended claims 18 and 19 is not taught or suggested

by Ofek. Therefore, amended claims 18 and 19 are likewise not anticipated by Ofek.

In view of the above, reconsideration and allowance of this application are now believed

to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

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MOUNTAIN VIEW OFFICE
23493
CUSTOMER NUMBER

Date: March 2, 2006

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this AMENDMENT UNDER 37 C.F.R. § 1.116 is being facsimile transmitted to the U.S. Patent and Trademark Office this 2nd day of March, 2006.

Mariann Tam

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